

Conto
B2
contd.

an electrically conductive layer provided in an interconnection layer on said barrier metal layer, and said interconnection layer filling said trench groove,

wherein said interconnection layer comprises a copper alloy which includes at least one of Bi, Sb, and Ti in a range of not less than 0.1 percent by weight to not more than a maximum solubility limit to copper, so that said copper alloy is in a solid solution.

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57. (Amended) An electrically conductive layer comprising:

a copper alloy which includes at least one of Bi, Sb, and Ti at more than 0.2 percent by weight,

said copper alloy formed on a substrate of a semiconductor circuit.

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58. (Amended) An electrically conductive layer comprising:

a copper alloy which includes at least one of Bi, Sb and Ti at not less than 0.1 percent by weight,

said copper alloy formed on a substrate of a semiconductor circuit.

59. (Amended) An electrically conductive layer comprising:

a copper alloy which includes at least one of Bi, Sb, and Ti in a range of not less than 0.1 percent by weight to not more than a maximum solubility limit to copper, so that said copper alloy is in a solid solution,

said copper alloy formed on a substrate of said semiconductor circuit.

60. (Amended) An electrically conductive layer comprising:

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a copper alloy which includes at least one of Bi, Sb, and Ti at not less than 0.1 percent by weight and at least one of Mo, Ta and W in a range of not less than 0.1 percent by weight to not more than 1 percent by weight,

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AMD.*

wherein said copper alloy has a melting point less than copper and the mass-transfer of copper is suppressed through said copper alloy.

61. (Amended) An electrically conductive layer provided in a semiconductor circuit comprising:

a copper alloy which includes at least one of Bi, Sb, and Ti at not less than 0.1 percent by weight,

said copper alloy provided in a groove within an inter-layer formed on a substrate of said semiconductor circuit.

REMARKS

Entry of this Amendment is proper because it narrows the issues on appeal and does not require further search by the Examiner.

Claims 1-37 and 57-63 are all claims presently pending in the application. Claims 1-37 and 57-63 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tsuji et al. (U.S. Pat. No. 5,004,520), Edelstein (U.S. Pat. No. 6,181,012 B1) and Dubin (U.S. Pat. No. 6,249,055 B1). Reconsideration is respectfully requested. These rejections are respectfully traversed in view of the following discussion.

Attached hereto is a marked-up version of the changes made to the specification and/or claims by the current Amendment. The attached page is captioned "VERSION